What is claimed is:

1. A smart antenna system for a spread-spectrum transmitting and receiving station, comprising:

a plurality of sector antennas;

at least one spread-spectrum transmitter, each configured to transmit spread-spectrum signals to be radiated from any one of the plurality of sector antennas;

at least one spread-spectrum receiver configured to process signals received by the plurality of sector antennas, wherein said signals are received at any of the plurality of sector antennas while one or more of the plurality of sector antennas are radiating;

a controller configured to:

determine one of the plural sector antennas to radiate particular spread-spectrum signals; and

cause the at least one spread-spectrum transmitter to transmit the particular spread-spectrum signals via the one antenna while not transmitting via others of the plural sector antennas.

2. The smart antenna system according to claim 1, wherein

each of the plurality of sector antennas is oriented to radiate and receive signals within a substantially separate geographic region.

3. The smart antenna system according to claim 1, wherein:

the controller is further configured to determine the one antenna to radiate based on an intended recipient of the particular spread-spectrum signals.

4. The smart antenna system according to claim 1, further comprising:

a switch, coupled with the controller, configured to selectively and temporarily couple the one antenna to any of the at least one transmitter.

5. The smart antenna system according to claim 1, further comprising:

a plurality of serving sectors, wherein each serving sector is associated with a respective one or more of the plurality of sector antennas and any one of the plurality of antennas is associated with only one of the plurality of serving sectors.

6. The smart antenna system according to claim 5, wherein the number of serving sectors is less than or equal to the number of antennas and each of the plurality of sector antennas is associated with a respective one of the plurality of serving sectors.

7. The smart antenna system according to claim 6, wherein:

the at least one transmitter further comprises:

a plurality of transmitters equal to the number of antennas, each transmitter associated with a respective one of the plurality of sector antennas and each configured to transmit only those spread-spectrum signals to be radiated from the corresponding one sector antenna; and

the at least one receiver further comprises:

a plurality of receivers equal to the number of antennas, each receiver associated with a respective one of the plurality of sector antennas and each configured to process only those spread-spectrum signals received by the corresponding one sector antenna.

8. The smart antenna system according to claim 5, wherein:

each of the transmitters is associated with a respective one of the serving sectors; and

each of the receivers is associated with a respective one of the serving sectors.

9. The smart antenna system according to claim 8, wherein:

each of the transmitters is further configured to transmit spread-spectrum signals to be radiated from only antennas associated with the serving sector corresponding to that transmitter; and

each of the receivers is further configured to process spread-spectrum signals received by only antennas associated with the serving sector corresponding to that receiver.

10. The smart antenna system according to claim 8, wherein the controller is further configured to independently determine the one antenna to radiate for each of the serving sectors.

11. The smart antenna system according to claim 5, wherein the plurality of serving sectors cover a substantially contiguous geographical area.

12. The smart antenna system according to claim 5, wherein each of the serving sectors has at least two adjacent sector antennas associated therewith.

13. A method for controlling plural sector antennas of a smart antenna system for a cell transmitting and receiving station, comprising the steps of:

coupling each sector antenna of the plural sector antennas to receiving circuits;

determining one of the plural antennas to radiate signals;

selectively transmitting a spread-spectrum signal via the one antenna while not transmitting via others of the plural antennas; and

during the transmitting, configuring each of the other sector antennas to receive spread-spectrum signals.

14. The method according to claim 13, wherein the antennas that are coupled to receiving circuits are configured to receive spread-spectrum signals in an associated serving sector.

15. The method according to claim 13, further comprising the step of:

receiving signals from a base station to be radiated from one of the plural sector antennas,

wherein said step of determining one of the plural antennas is based on the received signals.

16. A method for performing hand-off of a mobile station in a cellular system or wireless local loop that includes a smart antenna system of plural sector antennas, comprising the steps of:

recording signal strengths received at one or more of the plural sector antennas from the mobile station;

calculating the rates of signal changes from the recorded signal strengths;

assessing the movement of the mobile station based on the calculated rates;

determining when signal strengths received at one antenna from the mobile station reach a predetermined threshold; and

performing a hand-off of the mobile station when reaching of the predetermined threshold is so determined.

17. The method according to claim 16, wherein the hand-off comprises one of : a hand-off between two different sector antennas, a hand-off between two different serving sectors, and a hand-off between two adjacent cells.

18. The method according to claim 16, wherein the step of assessing the movement includes the step of:

determining if the rate of change is indicative of tangential motion across an antenna sector or is indicative of radial motion within an antenna sector.

19. The method according to claim 16, wherein the step of determining when signal strengths reach a predetermined threshold further comprises the steps of:

determining when signal strengths received at the one antenna from the mobile station reach a first predetermined threshold;

performing processing operations in preparation for hand-off; and

determining when signal strengths received at the one antenna from the mobile station reach a second predetermined threshold.

20. A method for arranging plural sector antennas into plural serving sectors of a cell base station, comprising the steps of:

associating with each serving sector a respective first subset of the plural sector antennas according to a first arrangement;

measuring a traffic load in each serving sector;

analyzing the measured traffic loads to determine if redistribution of the arrangement of antennas associated with the plural serving sectors should be performed;

if redistribution should be performed, calculating a balanced arrangement of antennas within the serving sectors; and

associating with each serving sector a respective second subset of plural antennas according to the balanced arrangement, wherein at least one respective subset for an associated serving sector differs from the respective first subset for the associated serving sector.

21. The method according to claim 20, wherein

the first arrangement associates the same number of antennas with each serving sector.

22. The method according to claim 20, wherein the step of analyzing the measured traffic includes the step of:

determining if a traffic load in any one of the serving sectors exceeds a predetermined threshold.

23. The method according to claim 22, wherein the step of calculating a balanced arrangement includes the step of:

calculating an arrangement wherein the traffic load in every one of the serving sectors is below the predetermined threshold.

24. The method according to claim 22, wherein the step of calculating a balanced arrangement includes the step of:

calculating an arrangement wherein the traffic loads between adjacent serving sectors is substantially equal.

25. A computer readable medium bearing instructions for controlling plural sector antennas of a smart antenna system, said instructions being arranged to cause one or more processors upon execution thereof to perform the steps of:

coupling each sector antenna of the plural sector antennas to receiving circuits;

determining one of the plural antennas to radiate signals;

selectively transmitting a spread-spectrum signal via the one antenna while not transmitting via others of the antennas; and

during the transmitting, configuring each of the other sector antennas to receive spread-spectrum signals.

26. A computer readable medium bearing instructions for performing hand-off of a mobile station in a cellular system that includes a smart antenna system of plural sector antennas, said instructions being arranged to cause one or more processors upon execution thereof to perform the steps of:

recording signal strengths received at one or more of the plural sector antennas from the mobile station;

calculating the rates of signal changes from the recorded signal strengths;

assessing the movement of the mobile station based on the calculated rates;

determining when signal strengths received at one antenna from the mobile station reach a predetermined threshold; and

performing a hand-off of the mobile station when reaching of the predetermined threshold is so determined.

27. A computer readable medium bearing instructions for performing location finding of a mobile station in a cellular system that includes a smart antenna system of plural sector antennas along with a cell-site signal coverage map, said instructions being arranged to cause one or more processors upon execution thereof to perform the steps of:

recording signal strengths received at one or more of the plural sector antennas from the mobile station;

calculating the rates of signal changes from the recorded signal strengths;

assessing the movement of the mobile station based on the calculated rates;

predicting the mobile station's movement based on the received signal strengths, and

determining the location of the mobile station by comparing the received signal strength from at least one sector antenna against the cell-site signal coverage profile along with its predicted movement.

28. A computer readable medium bearing instructions for arranging plural sector antennas into plural serving sectors of a call base station, said instructions being arranged to cause one or more processors upon execution thereof to perform the steps of:

associating with each serving sector a respective first subset of the plural sector antennas according to a first arrangement;

measuring a traffic load in each serving sector;

analyzing the measured traffic loads to determine if redistribution of the arrangement of antennas associated with the plural serving sectors should be performed;

if redistribution should be performed, calculating a balanced arrangement of antennas within the serving sectors; and

associating with each serving sector a respective second subset of plural antennas according to the balanced arrangement, wherein at least one respective subset for an associated serving sector differs from the respective first subset for the associated serving sector.

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